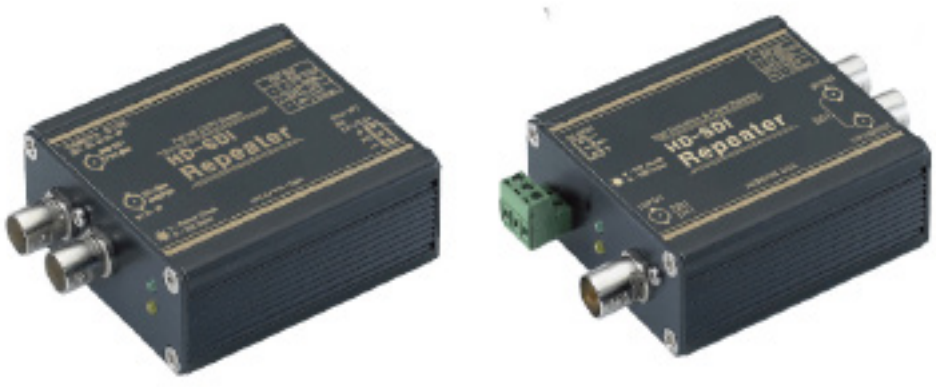
Genie
CCTV

MODEL: SDI03

HD-SDI Transmission Solutions Over Coaxial Cable

User Manual



Precautions and Safety Guidelines

Please read this user manual thoroughly prior to using this product

- Do not install the product in places having extremely low or high temperature conditions, those exposed to rain, snow, or high humidity, places containing or exposed to oil and gas, or exposed to vibration, shock, direct sunlight or exposed to outdoor weather conditions. Places exposed to radio waves (RF) or near to power lines. They may cause low performance or a product malfunction.
- Do not disassemble the product or insert foreign objects.
- The unit may pose an electrical shock hazard. Take care not to get an electric shock while using the device.
- Only use safety approved power supply units with electromagnetic compatibility.
- Do not use and/or connect any devices inappropriate to the unit. It may cause a product malfunction or fire.
- Use this product only in the temperature range -10°C to +50°C.
- Prior to turning on the device, check the condition of the data cable insulation connected to external devices.
- Before installing the product, or applying power, check its voltage rating.
- Do not subject the product to physical shocks.
- Do not use the device if smoke or a burning smell is being produced. It may cause a fire. If any smoke or a burning smell is produced, immediately turn the unit off and remove the power cable. Contact your distributor and get the product checked.
- If the power does not turn ON, make sure the power cable is correctly connected.
- If the device does not work properly, please contact your distributor.

Introduction

Overview

This HD-SDI repeater is a HD-SDI distance extension unit which can extend the distance to over 200 metres (HD: 1.485G) or 130 metres (Full HD: 2.397G). It also supports a Power over Coax repeater feature, using DC-DC down converter and power combiner (Power over Coax accessories). Power is supplied to the camera over the same coaxial cable used for HD-SDI transmission.

Features

- Distance extension for HD-SDI Signal (Repeater)
- Extending transmission distance over 200m (HD: 1.485G), 130m (Full HD: 2.97G)
- Using power supply unit (Power over Coax accessories), it's possible to power the Repeater and supply power to camera over the same coaxial cable used for HD-SDI transmission.
- Low infrastructure costs with easy maintenance.
- Possible to extend the HD-SDI distance and power transmission using additional repeaters.

HD Signal Standards

- Genie's HD-SDI transmission solutions conform with the SDI signal standards of the SMPTE (Society of Motion Picture and Television Engineers)

- The SDI (Serial Digital Interface) signals transmission system is a transmission system which transmits uncompressed video signals over a single coaxial cable. As SDI signals are digital, it's possible to transmit without modification (equalisation and re-clocking). Also, since the signals are uncompressed, there's no ageing or lag.

HD-SDI (SMPTE 292M)	3G-SDI (SMPTE 424M)
1280 x 720p, 50/59.94/60	1920 x 1080p, 50/59.94/60
1920 x 1080i, 50/60	
1920 x 1080p, 29.97/30	

Product Parts & Peripheral Device Connection

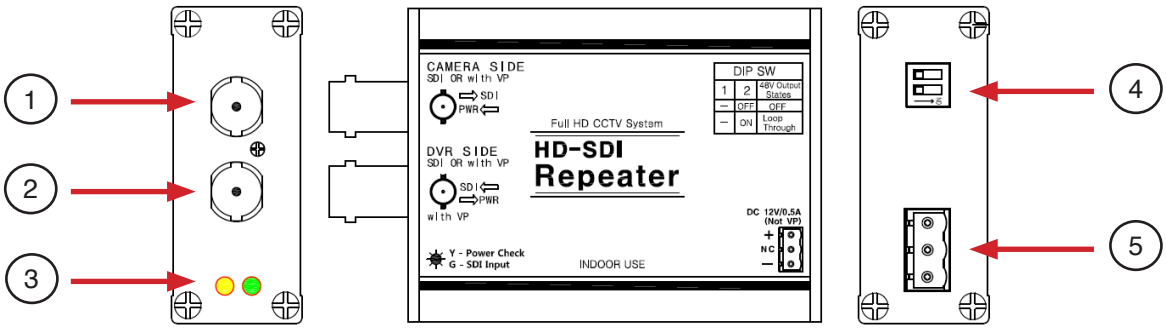
Product Parts and Function

1x in 1x out Repeater

- This unit extends the transmission distance of HD cameras with HD-SDI output.

- If you want to supply power to the camera over a coaxial cable, connect a DC-DC Down Converter to the camera.

If you DO NOT want to supply power using coax, set DIP SW2 OFF. Otherwise damage may be caused to the camera.



(1) SDI Input: Connect a HD-SDI device, such as HD-SDI camera over coaxial cable.
- Supplies power to the camera when the camera is connected via a DC Down Converter.

(2) SDI Output: Connect a HD-SDI device such as HD-SDI DVR over coaxial cable.
- Can receive power from a DC Down Converter or via repeaters (Power over Coax).

(3) LED Indicators for Power & SDI Input.

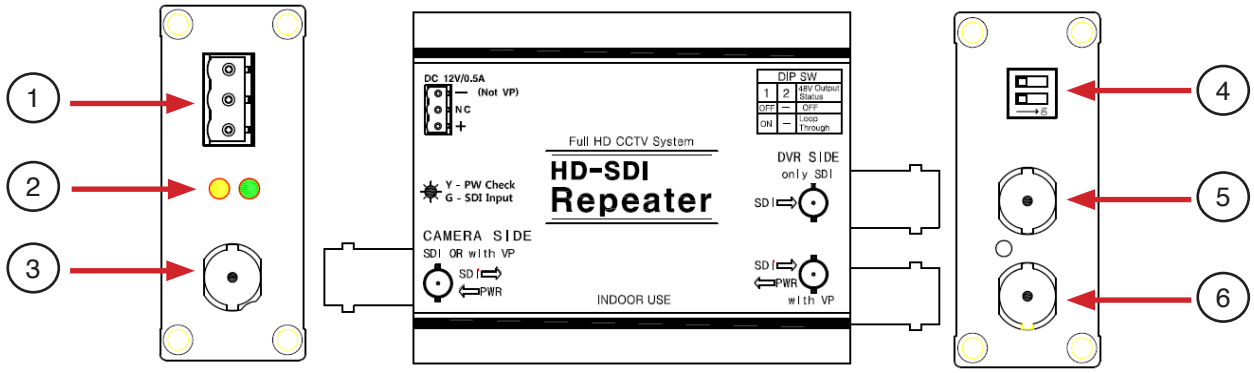
	LED Indicator	Description
YELLOW	ON	• If DIP SW2 is ON and the LED is ON, it indicates that power is supplied correctly over the coaxial cable (SDI output). • Even if DIP SW2 is OFF and power is not supplied over the coaxial cable, the LED is turned ON.
	Flickering	• If DIP SW2 is ON and the LED is flickering, it indicates that the cable has been disconnected or a short circuit has been produced in the cable connection.
GREEN	ON	• Indicates the SDI signals are being received correctly.

(4) DIP SW: DC48V Power Supply Configuration

DIP SW	**SW1**	Not Used	
	SW2	ON	• Supplies DC48V power, when correctly conected to another Repeater or DC-DC Down Converter. • When the devices are correctly connected, the Yellow LED turns ON. But, if the devices aren't connected correctly, or there's any abnormal operation, the LED flickers.
		OFF	**Does not supply DC48V Power (default mode)** • The Yellow LED is always ON.

(5) DC Input port
- DC INPUT: DC12 ~ 48V power input port (3-Pin T.M Block)

1x In 2x Out Repeater



(1) DC Input port
- DC INPUT: DC12 ~ 48V power input port (3-Pin T.M Block)

(2) LED Indicator of Power & SDI Input

	LED Indicator	Description
YELLOW	ON	• If DIP SW2 is ON and the LED is ON, it indicates that power is supplied correctly over the coaxial cable (SDI Output). • Even if DIP SW2 is OFF and power is not supplied over the coaxial cable, the LED is turned ON.
	Flickering	• If DIP SW2 is ON and the LED is flickering, it indicates that the cable has been disconnected or a short circuit has been produced in the cable connection.
GREEN	ON	• Indicates the SDI signals are being received correctly.

(3) SDI Input: Connect a HD-SDI device such as HD-SDI camera over coaxial cable
- Supplies power to the camera when the camera is connected with a DC-DC Down Converter.

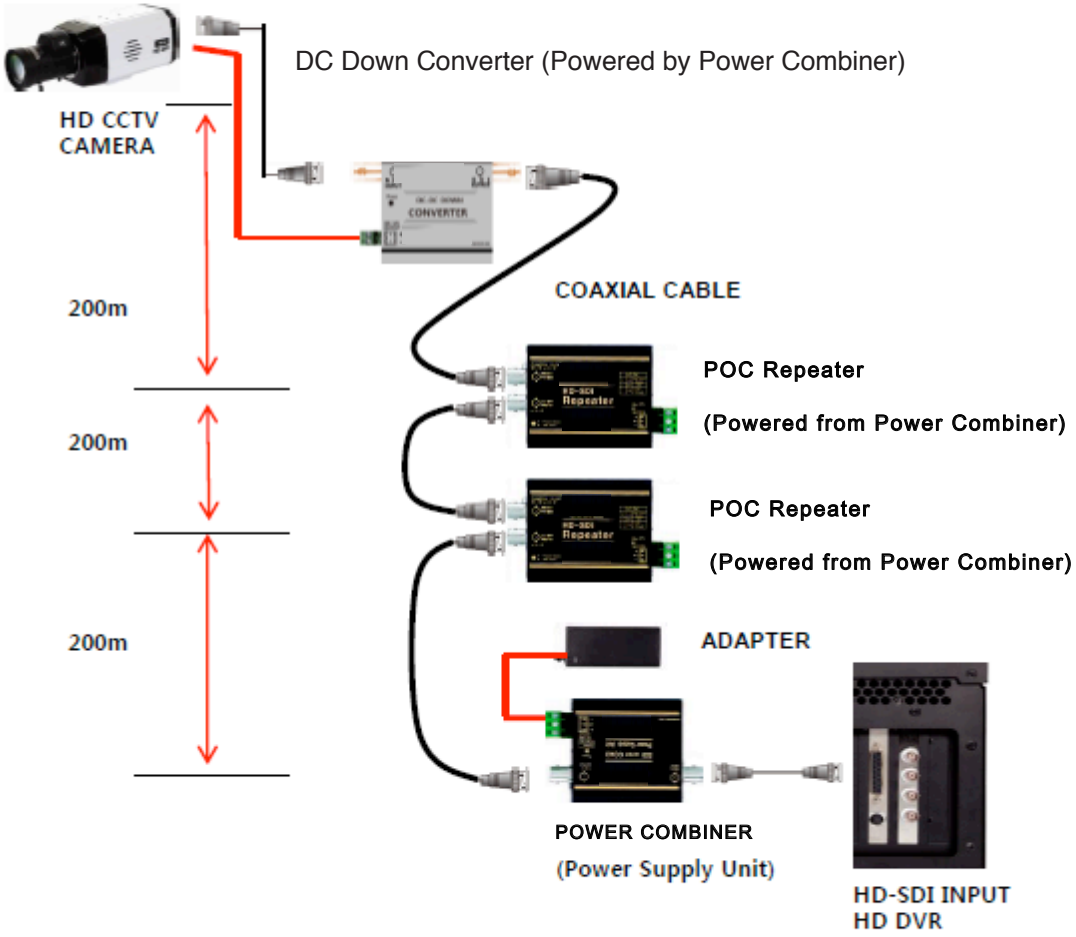
(4) DIP SW: DC48V Power Supply Configuration

DIP SW	**SW1**	Not Used	
	SW2	ON	• Supplies DC48V power, when correctly connected to another Repeater or DC-DC Down Converter. • When the devices are correctly connected, the Yellow LED turns ON. But, if the devices aren't connected correctly, or there's any abnormal operation, the LED flickers.
		OFF	**Does not supply DC48V Power (default mode)** • - The Yellow LED is always ON.

(5) SDI Output: Connect a receiver or device with SDI input via coaxial cable. Only the SD signals are transmitted.
- It's possible to connect directly to a SDI DVR or SDI monitor.

(6) SDI Output: Connect a HD-SDI device such as HD-SDI DVR via coaxial cable.
- It's possible to connect directly to a SDI DVR or SDI monitor.
- Can receive power from the power combiner or other repeaters.

Connection Diagram



Transmission Distance

Transmission distance between two HD-SDI transmission solutions using coaxial cable

Cable	Transmission Distance (m)	
	1.485Gb/s (HD)	2.97Gb/s (FULL HD)
Belden 1694A 18AWG	200	130
Belden 59 (8241)	100	
Belden 59 (543945)	150	90

Please note the distances shown could be reduced when in “real life situations”.
Therefore, we recommend connected cable runs are only 70% of the stated maximum.

- Only use BNC connectors with a low connection resistance.
- Avoid using excessive force when pulling the cable in.
- Never exceed the cable’s maximum bending radius.

Specification

		1x In 1x Out Repeater		
Video In		SDI (1.485G, 3G)		
Video Out		SDI (1.485G, 3G)		
HD-SDI Out		Buffered Output		
Power In		DC +12V/1A ~ +48V/1.04A		
Connect Port	SDI In	BNC-F		
	SDI Out	BNC-F		
	DIP SW	1	2	48V Output Status
		-	OFF	OFF
		-	ON	Loop Through
LED	SDI (Green)	Flickering: Normal Operation		
	Power (Yellow)	LED On: Normal, LED Flickering: Power Drop		
Temperature /Humidity		-10°C ~ +40°C / 0 ~ 80%		
Case Body / Weight		Aluminium / 120g		
Dimensions (mm)		78(W) x 60(H) x 25(D) mm		

		1x In 2x Out Repeater		
Video In		SDI (1.485G, 3G)		
Video Out 1		SDI (1.485G, 3G) With Power Supply		
Video Out 2		SDI (1.485G, 3G), Only SDI signals		
Power In		DC +12V/1A ~ +48V/1.04A		
Connect Port	SDI In	BNC-F		
	SDI Out	BNC-F		
	DIP SW	1	2	48V Output Status
		-	OFF	OFF
		-	ON	Loop Through
LED	SDI (Green)	Flickering: Normal Operation		
	Power (Yellow)	LED On: Normal, LED Flickering: Power Drop		
Temperature /Humidity		-10°C ~ +40°C / 0 ~ 80%		
Case Body / Weight		Aluminium / 120g		
Dimensions (mm)		78(W) x 60(H) x 25(D) mm		

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